

Product Safety Summary

Sodium Sulfide, solid (60-62 %, with crystallization waters > 30 %) (CAS No. 1313-82-2)

This Product Safety Summary is intended to provide a general overview of the chemical substance. The information on the summary is basic information and is not intended to provide emergency response information, medical information or treatment information. The summary should not be used to provide in-depth safety and health information. In-depth safety and health information can be found on the Material Safety Data Sheet (MSDS) for the chemical substance.

Names

- Sodium sulfide (sulphide)
- Sodium sulfide, hydrated
- Sodium monosulfide

Product Overview

Sodium sulfide is a yellow, solid flake with a sulfurous (rotten egg) smell. It is used in the pulp and paper industry and in leather processing to remove hair from hides. Sodium sulfide may be used in the making of colors and dyes. It can also be used in the manufacture of other chemicals, metals or in mining (ore processing) and in waste water, soil and process sludge treatment.

Solvay Chemicals, Inc. does not sell sodium sulfide directly to consumers. Consumers are unlikely to be exposed to sodium sulfide in any of the consumer product applications listed above and only where the sodium sulfide is not transformed or reacted.

Exposure to sodium sulfide can cause severe irritation to the skin, eyes, and respiratory tract. Sodium sulfide may cause sensitization (develop an allergic reaction). Breathing sulfide dusts may aggravate asthma or other pulmonary (breathing) diseases and may cause headaches, dizziness, nausea and vomiting. Ingestion may cause burns in the mouth and danger of perforation (puncturing) the esophagus (throat) or stomach, nausea, vomiting and diarrhea. Overexposure may result in death.

Manufacture of Product

- Solvay Chemicals, Inc. imports the sodium sulfide it sells from a Solvay Affiliate in Mexico.
- Solvay manufactures sodium sulfide by reacting strontium sulfide with sodium carbonate (soda ash), and purifying to form crystals. The water (H₂O) included in the chemical formula is water of hydration which helps chemically stabilize the crystal structure.



Product Description

Sodium sulfide (Na₂S) is manufactured and sold as a yellow, solid flake with a sulfurous (rotten egg) smell. Typical physical properties are provided in Table 1.

Table 1: Typical physical properties of Sodium Sulfide

Bulk Density	43.8-50 lbs/ft ³ (700-800 kg/m ³)
Flash point	Non- flammable
Melting point	approx. 194° F (90° C)
Boiling point	approx. 329° F (165° C)
Solubility in water	160 g/L @ 68° F (20° C)
pH	12.9 (10 g/L @ 68° F (20° C))

Product Uses

Sodium sulfide is used in many industries; for example, the pulp and paper industry and in leather processing to remove hair from hides. Sodium sulfide may be used in the making of colors and dyes. Sodium sulfide can also be used in the manufacture of other chemicals, metals or in mining processes and in waste water, soil and process sludge treatment.

Exposure Potential

- **Workplace exposure** - Exposures can occur at a sodium sulfide manufacturing facility or a manufacturing, packaging or storage facility that handles sodium sulfide. Exposure may also occur in the event of a transportation incident. Persons involved in maintenance, sampling and testing activities, or in the loading and unloading of sodium sulfide containers are at greater risk of exposure. Following good industrial hygiene practices will minimize the likelihood of sodium sulfide exposure; however, persons involved in higher risk activities should always wear proper personal protective equipment such as protective gloves and goggles. In instances where the potential for dusting is high, proper respiratory protection should also be worn.
- **Consumer exposure to products containing sodium sulfide** - Solvay Chemicals, Inc. does not sell sodium sulfide directly to consumers. Consumers are unlikely to be exposed to sodium sulfide in any of the consumer product applications listed above and only where the sodium sulfide is not fully transformed or reacted.
- **Environmental releases** - Spills of sodium sulfide should be contained and isolated from waterways and sewers or drains. Spills should be swept up and placed in a compatible container. Dispose of waste or residues in accordance with applicable local, state or federal regulations. Persons attempting to clean up sodium sulfide spills should wear proper personal protective equipment (See guidelines in the Workplace exposure section of this document or the [Material Safety Data Sheet](#)).
- **Fires** – Sodium sulfide is flammable or combustible when exposed to heat or flame. Fires that occur in the presence of sodium sulfide should be extinguished using powder or foam. Do NOT use carbon dioxide (CO₂) or water. When sodium sulfide decomposes (at very high temperatures), it liberates toxic hydrogen sulfide (H₂S), sulfur dioxide (SO₂) or sulfur oxides (SO_x).

For additional information concerning sodium sulfide emergency response procedures, please consult the [Material Safety Data Sheet](#).



Health Information

Sodium sulfide is not typically found in consumer products. If present in a consumer product, it should pose little a risk of symptoms due to being used in very low concentrations. Sodium sulfide can produce the following adverse health affects:

- **Contact** - Skin exposures can cause symptoms ranging from severe skin irritation or itching to redness and swelling. Eye exposure to sodium sulfide may result in redness, tearing or severe eye irritation and damage.
- **Inhalation** - The inhalation of sodium sulfide dusts can cause nose and throat irritation or coughing. Repeated or prolonged exposures may cause sore throat or nosebleeds. Inhalation may also cause severe respiratory reactions and aggravate asthma or other breathing diseases.
- **Ingestion** - The ingestion of sodium sulfide may cause severe irritation or burns of the mouth and throat, nausea, vomiting and diarrhea. There is danger of perforating (puncturing) the esophagus or stomach. Overexposure may result in death.
- **Other Effects** - The International Agency for Research on Cancer (IARC) has not classified sodium sulfide as a carcinogen (cancer causing).

For more information on health effects and routes of exposure, or for information concerning proper first aid measures, please consult the [Material Safety Data Sheet](#).

Environmental Information

Sodium sulfide is considered to be harmful to the environment.

For more ecological and environmental information concerning this product, please consult the [Material Safety Data Sheet](#).

Physical Hazard Information

For more information concerning the physical hazards of this product, please consult the [Material Safety Data Sheet](#).

Regulatory Information

Regulations may exist that govern the manufacture, sale, transportation, use and/or disposal of this chemical. These regulations can vary by city, state, country or geographic region. Information may be found by consulting the relevant [Material Safety Data Sheet](#) specific to your country or region.

Additional Information

- Solvay America, Inc. www.solvaynorthamerica.com
- Solvay Chemicals, Inc. www.solvaychemicals.us
- Solvay Chemicals, Inc. Material Safety Data Sheets
www.solvaychemicals.us/EN/Literature/LiteratureDocuments.aspx
- Contact Solvay Chemicals, Inc. solvaychemicals.us@solvay.com
- NJ Department of Health & Senior Services Hazardous Substance Fact Sheets
<http://web.doh.state.nj.us/rtkhsfs/factsheets.aspx> (Sodium sulfide)
- This summary was prepared in August, 2011.

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